UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,375	03/31/2004	Edward K. Y. Jung	0104-003-001-000000	1977

44765 7590 05/27/2008

SEARETE LLC
CLARENCE T. TEGREENE
1756 - 114TH AVE., S.E.
SUITE 110
BELLEVUE, WA 98004

EXAMINER	
SURVILLO, OLEG	

ART UNIT	PAPER NUMBER
2142	

MAIL DATE	DELIVERY MODE
05/27/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/816,375	JUNG ET AL.	
	Examiner	Art Unit	
	OLEG SURVILLO	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *09/28/07, 02/14/08, 04/08/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1-45 remain pending in the application. No claims have been amended. No claims have been canceled. No new claims have been added.

It is noted that at pages 139-141 of remarks under the heading: Conclusion it is acknowledged that: *"Applicants may have herein cancelled and/or amended one or more claims"*. Several submissions pertaining to canceled claims were presented under the same section of remarks. Applicants' uncertainty regarding the status of all claims is not understood. Applicants are therefore requested to verify whether or not any claims were in fact canceled because the Examiner fails to see that any claims were canceled in the Amendment dated February 4, 2008.

Response to Arguments

2. With regard to the Applicants' remarks filed on February 4, 2008:

it is noted that Applicants' arguments regarding objections and rejections made in the Office action mailed August 2, 2007 are addressed in the same order as made in the last Office action.

Regarding objection to an abstract as non-enabling to determine the nature and gist of the technical disclosure, Applicant's arguments have been fully considered but they are not persuasive. Applicants argued that *since the abstract includes recitations included in the independent claims, thus the abstract permits one "to determine quickly ... the nature and gist of the technical disclosure."* This argument is not persuasive

because the technical disclosure is not the same as the claimed invention. Also, the Examiner fails to see how a short single sentence is helpful in understanding the invention disclosed in the 43-page specification. Therefore, the objection is maintained. Applicants are encouraged to review the guidelines for drafting a proper abstract, as provided below under the heading: Specification.

Regarding objection to the specification as containing disclosure entirely outside the bounds of the claims, Applicants' arguments have been fully considered but they are not persuasive. Therefore, the objection is maintained. Applicants requested the Office to include citation to legal authority, such as citation to statutes or regulations in support of the objection. It is noted that such authority was cited in the last Office action at page 3 under section 4. Cited section of MPEP 1302.01 requires the Applicant to restrict the descriptive matter as to be in harmony with the claims when an application is apparently ready for allowance. Since this application is not in condition for allowance because issued identified below have not been resolved, Applicants are allowed to request objection to the specification as identified under section 7. below to be held in abeyance until allowable subject matter is indicated, pursuant to 37 CFR 1.111(b). However, Applicants are strongly encouraged to comply with the requirements of MPEP section 1302.01 early during the course of prosecution of the above-identified application unless they intend to incorporate the subject matter of all co-pending applications into the presently claimed invention prior to allowance of this application. If this is the case, appropriate claim amendments are expected in the next response.

Regarding the rejection of claims 21-40 under 35 U.S.C. 101, Applicants' arguments have been fully considered but they are not persuasive. Applicants argued that the Office action fails to establish that claim 21 is directed to non-statutory subject matter because claim 21 does not recite the structure identified by "means-plus-function" language. In particular, Applicants argued that claim 21 does not recite "index creation agent" as identified by the Examiner through invocation of 35 U.S.C. 112, sixth paragraph and reviewing the specification to identify the corresponding structure that performs the claimed function. This argument is not persuasive because Applicants failed to either rebut presumption that 35 U.S.C. 112, sixth paragraph applies or explain why the particular structure pointed by the Examiner is not the structure identified by "means" in the claimed "mean-plus-function" language. Therefore, 35 U.S.C. 101 rejection is deemed proper since the claimed system is directed to a software per se, failing to fall within a statutory category of invention. Thus, the rejection is maintained.

Regarding the rejection of claims 21-40 under 35 U.S.C. 112, first paragraph, Applicants' arguments have been fully considered but they are not persuasive. Applicants argued that: *"the Office action cites no authority for the assertion that claim 21, which includes two "means" recitations is reduced to a "single means" claim by the identification of a structure in the specification capable of realizing each of the two "means" clauses"*. The Examiner disagrees. Claimed "means-plus-function" language was interpreted to invoke 35 U.S.C. 112, sixth paragraph. The specification was reviewed and the corresponding structure that performs the claimed functions was identified. The specification shows that determining at least one of a sensing function or

a control function at a mote and creating one or more mote-addressed content indexes in response to said determining is performed by an index creation agent (202) (bottom of page 9, page 10). Therefore, the specification shows that means for determining are an index creation agent (202), and means for creating are also an index creation agent (202). Thus, if claim was written as "means for determining and creating", that claim would be a subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. Clearly, Applicants should not be able to avoid an undue breadth rejection by a mere formalism of splitting a single means for performing two functions into two separate means. The authority for "single means" claim rejection is MPEP section 2164.08(a), which was stated in the Office action mailed August 2, 2007 at page 5. Therefore, the rejection is maintained.

Further, Applicants argued with respect to the same issue as discussed above that: *"assuming arguendo that claim 21 is a single means claim, dependent claims 22-40, which depend from claim 21, are not single-means claims. More specifically, each of the claims 22-40 adds at least one further recitation to claim 21"*. This argument is not persuasive. Claims 22-40 do not introduce at least another element by further limiting either one of means for determining or means for creating of claim 21. Hence, each of the claims 22-40 does not include at least two elements that would form a combination and therefore are subject to the single means rejection, as discussed above.

Regarding the rejection of claims 12-13, 32-33, and 41-44 under 35 U.S.C. 112, second paragraph, Applicants' arguments have been fully considered but they are not persuasive. It is noted that section heading VI. ARGUMENT: THE OFFICE ACTION

ERRED IN REJECTING CLAIMS 25 AND 28 UNDER 35 U.S.C. 112, SECOND PARAGRAPH is incorrect because claims 25 and 28 were not rejected under 35 U.S.C. 112, second paragraph in the Office action mailed August 2, 2007. Regarding 35 U.S.C. 112, second paragraph rejection, Applicants argued that: *"Applicant is under no obligation to provide an order for recitations in a method claim"*. The Examiner disagrees. An order for recitations in a method claim is guided by an antecedent basis in the claim language and/or an explicit identification of the specified order to steps, and must also be consistent with the specified order provided in the specification, if such is provided. In situations where claim language of a dependent claim requires steps to be performed in an order inconsistent with the specification and is contradictory to the specified order of steps identified in an independent claim, 35 U.S.C. 112, second paragraph rejection is appropriate. In the instant case, the order of steps as specified in claims 12 and 13 is inconsistent with the specified order provided in the specification. Therefore, claims 12 and 13 are ambiguous because the order of steps (step of establishing/migrating is performed in response to the step of determining) is unclear to the extent that it is inconsistent with the order provided in the specification. Thus, the rejection is deemed proper and is maintained.

Regarding the rejection of claim 41 under 35 U.S.C. 112, second paragraph, Applicants' argument fails to comply with 37 CFR 1.111(b) because it amounts to a general allegation that claim 41 is unambiguous without specifically pointing out how the claim language is clear despite usage of inconsistent terminology in the claim language when referring to the same element. Therefore, the rejection is maintained.

Regarding the rejection of claim 43 under 35 U.S.C. 112, second paragraph, Applicants disagreed with the conclusion of the Office action that an index creation agent was interpreted by the Examiner as a software program, in light of the specification at last paragraph of page 8. However, Applicants failed to explain why the particular structure pointed by the Examiner is not the structure identified by the claimed element. In particular, Applicants failed to provide a citation from the specification that would limit an index creation agent to a hardware component. Therefore, the rejection is maintained.

Regarding the rejection of claims 1, 7-11, 21, and 27-31 under 35 U.S.C. 102(a) as being anticipated by Madden et al. Applicant's arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained.

As to claim 1, Applicants argued that the Office action fails to state a prima facie case of anticipation because the cited prior art (Madden et al.) fails to identify the same elements as in claim 1. In particular, Applicants asserted that Madden does not show verbatim the language of the claim. The Examiner disagrees because in order to for an Examiner to establish a prima facie case of anticipation of an Applicants' claim, the Examiner must interpret the claim. If it could be shown that the cited prior art discloses the claimed limitations in exactly the same words, no claim interpretation would be necessary. Therefore, Office action is not required to identify a reference that would repeat claim language verbatim.

As to claim 1, Applicants further argued that: *"the Office action has supplied no text, reference, or knowledge explaining why one skilled in the art should equate the*

above quoted material from Madden et al. with the recitation of claim 1". The Examiner disagrees for the same reasons as discussed above, wherein the quoted material from Madden et al. is not required to repeat the claim language word for word, as claimed limitations are a subject to interpretation, such interpretation being as broad as the claim terms would reasonably allow, in light of the specification, when read by one skilled in the art with which the claimed invention is most closely connected. To that extent, one of ordinary skill in the art at the time of the invention would have interpreted determining at least one of a sensing function at a mote as including process of sampling a sensor in order to verify a kind of sensor.

As to claim 1, Applicants also argued that: *"the Office action has supplied no text, reference, or knowledge explaining why one skilled in the art should equate "catalog" with "index" or "maintains" with "creating"".* The Examiner disagrees for the same reasons as discussed just above. In addition, Applicant's argument fails to comply with 37 CFR 1.111(b) because it amounts to a general allegation that one of ordinary skill in the art would not equate "catalog" with "index" or "maintains" with "creating" without providing specific evidence supporting the argument.

As to claims 7-11, 21, and 27-31, Applicants presented same arguments as discussed just above. The Examiner disagrees for the same reasons, which are not repeated for brevity.

Regarding the rejection of claims 1, 12, 14, 15, 18-21, 32, 34, 35, 38-40, and 45 under 35 U.S.C. 102(a) as being anticipated by Mulgund et al. Applicant's arguments have been fully considered but they are not persuasive. Therefore, the rejection is

maintained. Applicants presented similar arguments as discussed above with which the Examiner disagrees for the same reasons.

Regarding the rejection of claims 2 and 22 under 35 U.S.C. 103(a) as being unpatentable over Madden et al. in view of Chiloyan et al., Applicants' arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained. In their argument, Applicants disagree that Madden shows all the elements of claim 2. See page 88 of the Remarks, as filed. This argument is moot because the Office action has not asserted that Madden shows all the elements of claim 2. The Office action mailed August 2, 2007, at page 11, paragraph 14, recites: *"As to claims 2 and 22, Madden shows all the elements except for accessing at least one device entity registry."* If Madden showed all the elements of claim 2, 35 U.S.C. 102(a) rejection would have been applied to this claim.

Regarding the rejection of claims 3 and 4 (and claims 23 and 24 by extension) under 35 U.S.C. 103(a), Applicants have not presented arguments that would arise a need to be addressed by the Examiner separately.

Regarding the rejection of claim 5 (and claim 25 by extension) under 35 U.S.C. 103(a), Applicant's arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained. Applicants presented similar arguments as discussed regarding claim 1, with which the Examiner disagrees for the same reasons.

Regarding the rejection of claim 6 (and claim 26 by extension) under 35 U.S.C. 103(a), Applicant's arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained. Applicants argued that *the Office action in*

rejecting of claim 6 makes no statement as to whether Madden teaches or suggests the recitations of claim 1 from which claim 6 depends. The Examiner does not understand why the Office action should have included a statement that Madden teaches or suggests the recitations of claim 1 from which claim 6 depends, wherein claim 1 was rejected under separate grounds as being anticipated by Madden. If Applicants maintain their argument in the next response, they are requested to cite authority for the assertion that claim 6 must include such a statement.

Regarding the rejection of claim 13 (and claim 33 by extension) under 35 U.S.C. 103(a), Applicant's arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained. Applicants presented similar arguments as discussed regarding claim 1, with which the Examiner disagrees for the same reasons.

Regarding the rejection of claims 41-44 under 35 U.S.C. 103(a), Applicant's arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained. Applicants presented similar arguments as discussed regarding claim 1, with which the Examiner disagrees for the same reasons.

Regarding the rejection of claims 16 and 17 (and claims 36 and 37 by extension) under 35 U.S.C. 103(a), Applicant's arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained. Applicants presented similar arguments as discussed regarding claim 1, with which the Examiner disagrees for the same reasons.

As to any arguments not specifically addressed, they are the same as those discussed above.

Information Disclosure Statement

3. The information disclosure statement filed April 8, 2008 fails to comply with the provisions of 37 CFR 1.98 and MPEP § 609 because documents listed under section U.S. Patent Application Documents are not identified by a U.S. Patent Application Publication Number, as required by column heading. As a result, these documents have not been considered.

Specification

4. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:
(1) if a machine or apparatus, its organization and operation;
(2) if an article, its method of making;
(3) if a chemical compound, its identity and use;
(4) if a mixture, its ingredients;
(5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

6. The abstract of the disclosure is objected to because it does not enable the United States Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure. Correction is required. See MPEP § 608.01(b).

7. The application contains disclosure entirely outside the bounds of the claims. Applicant is required to modify the brief summary of the invention and restrict the descriptive matter so as to be in harmony with the claims (MPEP § 1302.01). In particular, it appears that only disclosure of section I. MOTE-ASSOCIATED INDEX CREATION (pages 6-11 of the specification) is relevant to the subject matter of claims 1-45, as presently claimed. The rest of the specification (pages 12-38) describes the subject matter of the co-pending applications wherein the name of each section in the specification corresponds to the name of each of the co-pending applications. Applicants are reminded that the subject matter of the later sections of the specification (sections II. through V.) is actually included through their incorporation by reference of

the related/parent applications, as mentioned in the beginning of the specification (pages 1-4). As a result, providing a detailed description of the subject matter of co-pending applications is redundant and must be removed from the current application.

Claim Rejections - 35 USC § 101

8. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. Claims 21-40 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 21 incorporates means-plus-function language limitations reciting a function to be performed rather than definite structure or materials for performing that function.

As to claim 21, limitations: "means for determining" and "means for creating" are interpreted to invoke 35 USC 112, sixth paragraph.

The current specification must be reviewed to assist in identifying the corresponding structure that performs the claimed function. The specification shows that determining at least one of a sensing function or a control function at a mote and creating one or more mote-addressed content indexes in response to said determining is performed by an index creation agent (202) (bottom of page 9, page 10). Therefore, means for determining are interpreted to be an index creation agent (202), and means for creating are also interpreted to be an index creation agent (202).

Since the index creation agent is a computer program, as evidenced by specification at page 8 last paragraph, a system of a computer software per se is not in one of the statutory categories.

The use of the word "system" does not inherently mean that the claim is directed to a machine. Only if at least one of the claimed elements of the system is a physical part of a device can the system as claimed constitute part of a device or a combination of devices to be a machine within the meaning of 35 U.S.C. 101.

Evidence is present in the specification that suggests to one of ordinary skill in the art that all claimed elements of the system (means for determining and means for creating) may be reasonably implemented as software programs per se, therefore the claim is rejected as a system of software per se, failing to fall within a statutory category of invention.

Claim 22 fails to introduce at least one physical part that would make the claimed system statutory, therefore this claim is rejected for the same reasons as claim 21.

As to claims 23-40, additional means-plus-function language does not introduce any tangible elements by further limiting either one of means for determining or means for creating which were identified above as software elements per se. Therefore, additional means fail to render a system of claim 21 statutory under 35 U.S.C. 101.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 21-40 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

Claims 21, 23-40 incorporate means-plus-function limitations reciting a function to be performed rather than definite structure or materials for performing that function.

As to claim 21, limitations: "means for determining" and "means for creating" are interpreted to invoke 35 USC 112, sixth paragraph.

The current specification must be reviewed to assist in identifying the corresponding structure that performs the claimed function. The specification shows that determining at least one of a sensing function or a control function at a mote and creating one or more mote-addressed content indexes in response to said determining is performed by an index creation agent (202) (bottom of page 9, page 10). Therefore, means for determining are an index creation agent (202), and means for creating are also an index creation agent (202).

Thus, if claim was written as "means for determining and creating", that claim would be a subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. Clearly, Applicants should not be able to avoid an undue breadth rejection by a mere formalism of splitting a single means for performing two functions into two separate means.

As a result, claim 21 is a single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, and is, therefore,

subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. *In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983)*

MPEP 2164.08(a)

Claims 22-40 do not introduce at least another element by further limiting either one of means for determining or means for creating of claim 21. Hence, each of the claims 22-40 does not include at least two elements and therefore are subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph, as discussed above.

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 12-13, 32-33, and 41-44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 12 and 13 (and corresponding claims 32 and 33), the step of establishing an index-creating agent at the mote in response to said step of determining is ambiguous because the order of steps is unclear to the extent that it is inconsistent with the order provided in the specification. In particular, the preamble of claim 12 states that step of creating is performed after (in response to) step of determining. The body of the claim further limits the step of creating by introducing additional steps (establishing, determining, and associating). However, the step of establishing an index-creating agent at the mote in response to the step of determining is inconsistent with the specification. The specification shows at the bottom of page 9 and the top of page 10

that "*...index creation agent communicates with the device entities to find out what sensing functions are present and/or available at their various respectively associated devices...*" Thus, the specification identifies an index-creating agent as performing the step of determining (recited in claim 1 and preamble of claim 12). Based on the specification, one of ordinary skill in the art would reasonably conclude that an index-creating agent is established prior to the step of determining in order for it to perform the step of determining. Therefore, the step of establishing an index-creating agent at the mote subsequently (in response to) step of determining, as currently claimed, is inconsistent with the specification and is, therefore, ambiguous.

Claim 13 contains similar inconsistency wherein the step of migrating to the mote is claimed to be performed in response to the step of determining (recited in claim 1 and preamble of claim 13).

If Applicants assert that the index creation agent does not perform the step of determining (of claim 1 and preamble of claims 12 and 13), as identified by the Examiner, the appropriate citation from the specification must be provided in the next response clearly indicating which component of the invention performs the recited step of determining.

As to claim 41, the usage of inconsistent terminology in the claim language when referring to the same element renders the claim ambiguous because it is unclear whether at least one mote-appropriate device and a mote refer to the same element or a mote-appropriate device and a mote are two distinct elements.

Claims 42-44 are rejected because they dependent from claim 41.

As to claim 43, an index creation agent is interpreted by the Examiner as a software program, in light of the specification at last paragraph of page 8. It is unclear how a software program may comprise a processor, which is a hardware component.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1, 7-11, 21, and 27-31 are rejected under 35 U.S.C. 102(a) as being anticipated by "The Design of an Acquisitional Query Processor For Sensor Networks" by Samuel Madden et al.

As to claims 1 and 21, Madden et al. shows

determining at least one of a sensing function or a control function at a mote [sampling a sensor *s* to evaluate any predicate over the attribute *sensors.s* (section 4.2 Ordering of Sampling And Predicates)]; and

creating one or more mote-addressed content indexes in response to said determining [creating and maintaining a catalog of metadata that describes a particular mote's local attributes, events, and information about the costs of processing and delivering data (section 4.1 Metadata Management, and Table 2, and 3)].

Madden also shows that recited functions are performed by a TinyDB (section 1 Introduction, paragraph 4).

As to claims 7 and 27, Madden shows creating at least one extensible index [a sensors table, which is conceptually unbounded (section 3.1 paragraph 3)].

As to claims 8 and 28, Madden shows creating the at least one extensible index in response to a type of content indexed [creating a sensors table in response to light and temperature readings selected as a type of content requested from sensors (section 3.1 paragraph 3)].

As to claims 9 and 29, Madden shows creating at least one a mote-addressed sensing index [a sensor table of sensors' readings (section 3.1 paragraph 3)].

As to claims 10 and 30, Madden shows creating at least one of a mote-addressed routing/spatial index [a list of neighbors and some routing information about the connectivity of those neighbors to the rest of the network (section 2.2 Communication in Sensor Networks, paragraph 2)].

As to claims 11 and 31, Madden shows inserting at least one device identifier in the one or more mote-addressed content indexes [nodeid that is selected to be reported in the sensors table (section 3.1, see the first query)].

16. Claims 1, 12, 14, 15, 18-21, 32, 34, 35, 38-40, and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Mulgund et al. (US 2002/0161751 A1).

As to claims 1 and 21, Mulgund shows

determining at least one of a sensing function or a control function at a mote [discovering and maintaining the distributed sensor network topology (paragraph [0007]) wherein at least one of a sensing function or a control function is interpreted to be at least one of the data elements outlined in paragraphs 0021 – 0024]; and

creating one or more mote-addressed content indexes in response to said determining [building a database model by updating relational database logical design tables at each step of the discovering step (paragraph 0007)].

Mulgund also shows a sensor network modeling agent (summary of the invention) for performing the recited functions.

As to claims 12 and 32, Mulgund shows

establishing an index-creating agent at the mote [causing the network modeling agent to visit a first sensor node and mark the first node visited (paragraph 0007). Note that terms "node" and "mote" are interpreted to have same meaning of small embedded platform that has one or more sensors (paragraph 0026) and therefore these terms are used here interchangeably];

determining a mote-network address of the mote (paragraphs [0021] and [0028] – [0031]); and

associating at least one of a mote-addressed sensing index, a mote-addressed control index, or a mote-addressed routing/spatial index with the mote-network address of the mote (Fig. 3 and paragraph [0037]).

As to claims 14, 15, 34, and 35, Mulgund shows

determining a mote-network address of the mote (paragraphs [0021] and [0028] – [0031]);

determining one or more types of control and sensing available from one or more devices of the mote (paragraphs [0021] – [0024]) wherein the following data elements are obtained by interrogating a node (paragraph [0044]); and

associating the one or more types of control or sensing available from one or more devices of the mote with the mote-network address of the mote (Fig. 3 and paragraph [0037]).

As to claims 18-20 and 38-40, the claims will be interpreted broadly since the meaning of the claimed limitations is not understood.

As to claims 18-20 and 38-40, Mulgund shows associating one or more mote-appropriate routing addresses [note addresses (see table 20 of Fig. 3)] with at least one mote-addressed content index (Fig. 3 and Fig. 4, paragraphs [0037]-[0038]) wherein mote-addressed content index could be addressed directly or indirectly depending on the implementation (paragraph [0042]).

As to claim 45, Mulgund shows

at least one mote-appropriate device comprising a sensing node (Fig. 2 and paragraph [0026]); and

a mote-addressed content index having at least a sensing function of said at least one mote-appropriate device (Fig. 3 paragraph [0037]).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

18. Claims 2 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over "The Design of an Acquisitional Query Processor For Sensor Networks" by Samuel Madden et al. in view of Chiloyan et al. (US Patent No.: 7,165,109).

As to claims 2 and 22, Madden shows all the elements except for accessing at least one device entity registry.

Chiloyan shows accessing at least one device entity registry comprising having an operational system accessing device registry to check if the particular peripheral device model is included in the current device registry (col. 1 lines 50-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Madden by accessing at least one device entity

registry in order to check if the particular device model and necessary information about the device is in the registry (col. 1 lines 58-63 in Chiloyan).

19. Claims 3-6, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over "The Design of an Acquisitional Query Processor For Sensor Networks" by Samuel Madden et al. in view of Godlewski (US Patent No.: 6,421,354).

As to claims 3 and 23, Madden shows communicating with at least one device comprising a sensor to collect its reading data (section 3.1 Basic Language Features) and store it in a sensors table (lines 1-20).

Madden does not expressly shows that communication is established with at least one device-associated entity.

Godlewski shows communicating with at least one device-associated entity comprising a sensor interface (Fig. 1 and Fig. 4) (col. 1 lines 45-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Madden by communicating with at least one device-associated entity in order to receive data from a sensor in the appropriate format (col. 1 lines 45-55 in Godlewski).

As to claims 4 and 24, Madden in view of Godlewski shows communicating with at least a light device entity (col. 5 lines 58-67 and col. 6 lines 1-10).

As to claims 5 and 25, Madden shows accessing at least one device identifier of a mote-addressed content index (section 3.1 Basic Language Features lines 14-16).

As to claims 6 and 26, Madden in view of Godlewski shows communicating with at least one device entity using a common application protocol (Fig. 6 col. 13 lines 7-42 in Godlewski).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Madden by communicating with at least one device entity using a common application protocol in order to transmit data from a sensor to the communicator using sensor interface software (col. 13 lines 35-42 in Godlewski).

20. Claims 13, 33, and 41-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of "The Design of an Acquisitional Query Processor For Sensor Networks" by Samuel Madden et al.

As to claims 13 and 33, Mulgund shows

migrating to the mote comprising visiting a first sensor node (paragraph [0007] lines18-19); and

querying at least one device entity with the index creation agent comprising interrogating a node with a network modeling agent (paragraph [0044]).

Mulgund shows that each node contains some local memory or other knowledge base for recording sensor output data, which can be retrieved by interrogating the node (paragraph [0030]), which suggests that there exists some management module that

collects data from sensors and stores it in the knowledge base, however, the management module per se is not explicitly shown.

Madden shows installing an index creation agent at the mote comprising a TinyDB, which is a distributed query processor that runs on each of the nodes in a sensor network (section 1 Introduction, paragraph 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by installing an index creation agent at the mote in order to select, join, project, and aggregate data from the sensors (section 1 Introduction, paragraph 4 in Madden).

As to claim 41, Mulgund shows

at least one mote-appropriate device comprising a sensing node (Fig. 2 and paragraph [0026]); and

at least one index creation agent comprising a sensor network modeling agent, said at least one index creation agent configured to create at least one of a sensing index, a control index, or a routing/spatial index (Fig. 3 and paragraph [0037]).

Mulgund also shows that each node contains some local memory or other knowledge base for recording sensor output data, which can be retrieved by interrogating the node (paragraph [0030]), which suggests that there exists some agent resident in a mote that collects data from sensors and stores it in the local knowledge base, however, the local agent per se is not explicitly shown.

Madden shows an index creation agent resident in a mote comprising a TinyDB, which is a distributed query processor that runs on each of the nodes in a sensor network (section 1 Introduction, paragraph 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by having an index creation agent resident in the mote in order to select, join, project, and aggregate data from the sensors (section 1 Introduction, paragraph 4 in Madden).

As to claim 42, Mulgund shows that at least one mote-appropriate device comprises at least a temperature device (paragraph [0026]).

Claim 43 will be examined as best understood.

As to claim 43, Mulgund in view of Madden shows a processor configured to obtain at least a sensing function of the mote (section 2.1 Properties of Sensor Devices, paragraph 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Mulgund by having a processor in order to process sensor data that is being stored in a knowledge base (Fig. 2 in Mulgund).

As to claim 44, Mulgund shows at least one of a processor, a memory, or a communications devices formed from a substrate (paragraph [0026]).

21. Claims 16, 17, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of Kung et al. (US 2005/0021724 A1).

As to claims 16 and 36, Mulgund shows

determining a mote-network address of the mote (paragraphs [0021] and [0028] – [0031]); and

associating the one or more types of information related to devices of or proximate to the mote with the mote-network address of the mote (Fig. 3 and paragraph [0037]).

Mulgund does not show determining one or more types of spatial information related to devices of or proximate to the mote.

Kung shows determining one or more types of spatial information related to devices of or proximate to the mote (paragraph [0036]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by determining one or more types of spatial information related to devices of or proximate to the mote in order to determine a global position of a mote that would identify a location of the mote in space (paragraph [0010] in Kung).

As to claims 17 and 37, Mulgund shows

determining a mote-network address of the mote (paragraphs [0021] and [0028] – [0031]); and

associating the one or more types of information of other motes proximate to the mote with the mote-network address of the mote (Fig. 3 and paragraph [0037]).

Mulgund does not show determining one or more types of absolute spatial information of other motes proximate to the mote.

Kung shows determining one or more types of absolute spatial information of other motes proximate to the mote (paragraph [0036]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by determining one or more types of absolute spatial information of other motes proximate to the mote in order to determine a global position of a mote that would identify a location of the mote in space (paragraph [0010] in Kung).

Conclusion

22. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG SURVILLO whose telephone number is (571)272-9691. The examiner can normally be reached on M-Th 8:30am - 6:00pm; F 8:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Oleg Survillo
Phone: 571-272-9691

/Andrew Caldwell/
Supervisory Patent Examiner, Art Unit 2142